CLAIMS

1. A method of making a vehicle windshield, the method comprising:

providing first and second glass substrates;

ion beam milling at least one surface of the first glass substrate so as to remove at least 2 Å of glass from at least a portion of the first substrate and form an ion beam milled surface of the first substrate;

sputtering a coating, including at least one infrared (IR) reflecting layer, on the ion beam milled surface of the first substrate; and

laminating the first substrate with the coating thereon to the second substrate via a polymer inclusive interlayer so that the coating and the interlayer are provided between the first and second substrates.

2. The method of claim 1, wherein the IR reflecting layer comprises silver (Ag).

3. The method of claim 1, wherein the coating comprises at least first and second IR reflecting layers comprising Ag.

4. The method of claim 3, wherein the coating further comprises:

a first dielectric layer provided between the first substrate and the first IR reflecting layer comprising Ag,

a second dielectric layer between the first and second IR reflecting layers, and

a third dielectric layer between the second IR reflecting layer comprising Ag and the polymer inclusive interlayer.

5. The method of claim 1, wherein said ion beam milling removes at least 5 Å of glass from the first substrate.

6. The method of claim 5, wherein said ion beam milling removes from 10-100 Å of glass from the first substrate.

7. The method of claim 1, wherein the polymer inclusive interlayer comprises polyvinyl butyral (PVB).

8. The method of claim 1, wherein the windshield is made so as to have at least one of the following characteristics:

visible transmittance (Ill. A, 2 deg.):	>= 70%
haze:	<= 0.4 %.

9. The method of claim 1, wherein the windshield is made so as to have at least one of the following characteristics:

visible transmittance (Ill. A, 2 deg.):	>= 75%
haze:	<= 0.3 %.

10. The method of claim 1, wherein the coating has a sheet resistance (R_s) of less than or equal to 10 ohms/sq.

11. The method of claim 10, wherein the coating has a sheet resistance (R_s) of less than or equal to 5 ohms/sq.

12. The method of claim 1, further comprising making the first substrate via a float process utilizing a tin bath so as to cause the first substrate to have a tin surface and a non-tin surface, and wherein the ion beam milling is performed on the non-tin surface of the first substrate.

13. The method of claim 1, further comprising ion beam milling at least one surface of the second substrate prior to the laminating.

14. The method of claim 1, further comprising:

after said sputtering and prior to said laminating, heat bending said first substrate with the coating thereon into a desired windshield shape.

15. The method of claim 1, wherein the ion beam milling reduces haze in the windshield by at least about 20%.

16. The method of claim 1, wherein the ion beam milling comprises directing an ion beam at the surface of the first substrate so that the ion beam is incident upon the surface of the first substrate so as to form an angle θ with first substrate of from 20-70 degrees.

17. The method of claim 1, wherein the ion beam milling comprises directing an ion beam at the first substrate so that the ion beam is incident upon the first substrate in order to form an angle θ with the substrate of from 30-60 degrees.

18. A method of making a laminated window, the method comprising:
providing first and second glass substrates;

ion beam milling at least one surface of the first glass substrate so as to remove at least 2 Å of glass from at least a portion of the first substrate and form an ion beam milled surface of the first substrate;

forming a coating on the ion beam milled surface of the first substrate; and laminating the first substrate with the coating thereon to the second substrate via a polymer inclusive interlayer so that the coating and the interlayer are provided between the first and second substrates.

19. The method of claim 18, wherein the ion beam milling comprises directing an ion beam at the surface of the first substrate so that the ion beam is incident upon the surface of the first substrate so as to form an angle θ with first substrate of from 20-70 degrees.

20. The method of claim 18, wherein the ion beam milling comprises directing an ion beam at the first substrate so that the ion beam is incident upon the first substrate in order to form an angle θ with the substrate of from 30-60 degrees.

21. The method of claim 18, wherein the coating comprises first and second layers comprising Ag.

22. The method of claim 21, wherein the coating further comprises:

a first dielectric layer provided between the first substrate and the first layer comprising Ag,

a second dielectric layer between the first and second layers comprising Ag, and

a third dielectric layer between the second layer comprising Ag and the polymer inclusive interlayer.

23. The method of claim 18, wherein said ion beam milling removes at least 5 Å of glass from the first substrate.

24. The method of claim 23, wherein said ion beam milling removes from 10-100 Å of glass from the first substrate.

25. The method of claim 18, wherein the window has a visible transmittance of at least 70%.

26. The method of claim 25, wherein the window has a visible transmittance of at least 75%.

27. The method of claim 18, wherein the window comprises a vehicle windshield.

28. The method of claim 18, wherein the window has haze of <= 0.4%.

29. The method of claim 28, wherein the window has haze of <= 0.3%.

30. The method of claim 18, wherein the coating has a sheet resistance (R_s) of less than or equal to 5 ohms/sq.

31. The method of claim 18, further comprising:

after said forming and prior to said laminating, heat bending said first substrate with the coating thereon.

32. The method of claim 18, wherein the ion beam milling reduces haze in the window by at least about 20%.

33. The method of claim 18, wherein the ion beam milling comprises ion beam milling substantially the entire one surface of the first substrate.

34. A vehicle windshield comprising:

first and second glass substrates laminated to one another via a polymer inclusive interlayer;

wherein at least one surface of the first glass substrate is ion beam milled; and

wherein the windshield has a visible transmittance of at least 70%.

35. The vehicle windshield of claim 34, wherein each of the first and second glass substrates are heat bent, and wherein the windshield further comprises a low-E coating provided on the first substrate over the ion beam milled surface thereof so as to contact the ion beam milled surface.

36. A method of making a vehicle windshield with reduced haze, the method comprising:

ion beam milling a first substrate,

laminating the first substrate to a second substrate via an interlayer to form the windshield, and

wherein the ion beam milling causes haze in the windshield to be reduced by at least 20%.

37. The method of claim 36, wherein the ion beam milling causes haze in the windshield to be reduced by at least 50%.

38. A method of making a window unit, the method comprising:

providing first and second glass substrates;

ion beam milling at least one surface of the first glass substrate so as to remove at least 2 Å of glass from at least a portion of the first substrate and form an ion beam milled surface of the first substrate;

forming a coating on the ion beam milled surface of the first substrate; and coupling the first substrate with the coating thereon to the second substrate so that the coating is provided between the first and second substrates.

39. The method of claim 38, wherein the ion beam milling comprises directing an ion beam at the surface of the first substrate so that the ion beam is incident upon the surface of the first substrate so as to form an angle θ with first substrate of from 20-70 degrees.

40. The method of claim 38, wherein said ion beam milling removes at least 5 Å of glass from the first substrate.

41. The method of claim 38, wherein said ion beam milling removes from 10-100 Å of glass from the first substrate.

42. The method of claim 38, wherein the window has a visible transmittance of at least 70%.

43. The method of claim 38, wherein the window unit comprises one of a vehicle windshield and an insulating glass (IG) unit.

44. The method of claim 43, further comprising another coating provided on either the first or second substrate.

45. The method of claim 44, wherein the another coating comprises diamond-like carbon (DLC).

46. A method of making an insulating glass (IG) window unit, the method comprising:

providing first and second glass substrates;

ion beam milling at least one surface of the first glass substrate so as to remove at least 2 Å of glass from at least a portion of the first substrate and form an ion beam milled surface of the first substrate;

forming a coating on the ion beam milled surface of the first substrate; and

coupling the first substrate with the coating thereon to the second substrate via at least one spacer so that the coating is provided between the first and second substrates and the substrate are spaced apart with a space therebetween.

47. The method of claim 46, wherein the space is at least one of: filled with gas, and evacuated so as to be at a pressure less than atmospheric pressure.

48. The method of claim 46, wherein the ion beam milling comprises directing an ion beam at the surface of the first substrate so that the ion beam is incident upon the surface of the first substrate so as to form an angle θ with first substrate of from 20-70 degrees.

49. The method of claim 46, wherein said ion beam milling removes at least 5 Å of glass from the first substrate.

50. The method of claim 46, wherein said ion beam milling removes from 10-100 Å of glass from the first substrate.